UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,892	11/13/2001	S. Samuel DeAth	7043-15	6256

1059 7590 03/24/2003

BERESKIN AND PARR
SCOTIA PLAZA
40 KING STREET WEST-SUITE 4000 BOX 401
TORONTO, ON M5H 3Y2
CANADA

EXAMINER
FLOOD, MICHELE C

ART UNIT	PAPER NUMBER
1654	

DATE MAILED: 03/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/986,892	DeAth et al.
Examiner	**Art Unit**
Michele Flood	1654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Dec 18, 2002*.

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-12* is/are rejected.

7) ☒ Claim(s) *13 and 14* is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Acknowledgment is made of the receipt and entry of the amendments filed on December 18, 2002.

Claims 1-14 are under examination.

Specification

The use of the trademarks, BOD™ and TWEEN 80™, has been noted in this application. For example, see page 2, line 24. Trademarks should be capitalized wherever they appear and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks. It is suggested that each letter of the trademark be capitalized or include a proper trademark symbol, such as ™ or ®.

Claim Objections

Claim 13 is objected to under 37 CFR 1.75(c) as being in improper form because a claim can not depend from itself. Similarly, Claim 14 is objected to as the claim depends from an objected claim. Accordingly, the claims have not been treated on the merits.

Applicant is advised that should claim 8 be found allowable, claim 12 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-4, 6, 7 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2-4 and 9 recite the limitation "the ion agent". The claims lack clear antecedent basis for this limitation.

All other cited claims depend directly or indirectly from rejected claims and are, therefore, also, rejected under U.S.C. 112, second paragraph for the reasons set forth above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4-8, 10 and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Carlin et al. (O).

Applicant claims an aqueous antimicrobial composition for disinfecting, sanitizing or cleaning surfaces, comprising : (a) about 0.5% to 10% by volume of at least one essential oil exhibiting antimicrobial properties in a water carrier; (b) about 2 to 12% by volume of a solvent sufficient to form an aqueous mixture of the essential oils in the water carrier; (c) sufficient water to make up 100% by volume; and (d) about 1 to 1000 ppm of an agent for introducing ions into the water. Applicant further claims the composition defined in claim 1, comprising about 10 to 100 ppm of the ion agent. The composition defined in claim 1, wherein the at least one essential oil is selected from the group consisting of thyme oil, lemongrass oil, clove oil and eucalyptus oil,

and mixtures thereof. The composition defined in claim 4, comprising about 2% to 3.25% by volume of the solvent. The composition defined in claim 4, comprising about 0.05% to 0.50% by volume of a surfactant. The composition defined in claim 1, wherein the ions are groundwater ions. Applicant further claims the composition defined in claim 1, wherein the at least one essential oil comprises a mixture of essential oils.

Carlin teaches an aqueous composition, i.e., a mouth rinse or mouthwash solution, for the removal of supra-gingival accumulation of plaque comprising at least one essential oil, an antiseptic or antimicrobial quaternary ammonium salt detergent such as benzalkonium chloride, benzenthonium chloride, cetylpyridium chloride, domiphen bromide, 1-(3-chlorallyl) -3,5-7 triaza-1-azoniaadamentate chloride, or menthene ammonium chloride, and an ethanol/water solution. See page 4, lines 1-17. On page 6, line 8 to page 8, lines 1-4, Carlin teaches various essential oils and mixtures thereof which can be incorporated into the making of the referenced composition: "The concentration of the essential oil (s) ranges by weight from about 0.01% to about 1.0%. Carlin also teaches adding non-toxic oral water-alcohol mixtures to the composition as carrier vehicles in a weight ratio from about 1:1 to about 20:1, and most preferably from about 3:1 to about 10:1, on page 8, lines 5-11. Surfactants, especially cationic surfactants, in amounts up to about 5%, and preferably from about 0.5% to about 2%, by weight of the oral liquid anti-plaque, anti-gingivitis composition are also added to the Carlin' composition. See page 9, lines 14-23 and page 13, lines 10-21. On page 13, line 22 to page 14 in its entirety, Carlin teaches adding fluoride ion releasing fluorine compounds to his composition in an amount up to about 1%, preferably

from about 0.001% to about 0.1%, and most preferably from about 0.001% to about 0.05%. On page 36 in TABLE II, Carlin teaches a composition wherein sufficient water makes up 100% by volume of the composition.

The claims are drawn to an aqueous antimicrobial composition for disinfecting, sanitizing or cleaning surfaces comprising claimed amounts of at least one essential oil exhibiting antimicrobial properties in a water carrier (e.g., thymol from thyme oil; limonene from lemongrass oil; clove oil; eucalyptus oil; and clove oil, etc.), a solvent sufficient to form an aqueous mixture of the essential oils in the water carrier (e.g., alcohol), sufficient water to make up 100% by volume, and about 1 to 1000 ppm or about 10 to 100 ppm of an agent for introducing ions into the water (fluoride ion releasing fluorine compounds).

The cited reference discloses an aqueous antimicrobial composition comprising the claimed ingredients ---- which appears to be identical to the presently claimed extract, since it exhibits strong disinfecting, sanitizing, and cleansing activities; and it is, therefore, considered to anticipate the claimed aqueous antimicrobial composition.

In the alternative, even if the claimed aqueous antimicrobial composition is not identical to the referenced aqueous antimicrobial composition with regard to some unidentified characteristics, the differences between that which is disclosed and that which is claimed are considered to be so slight that the referenced aqueous antimicrobial composition is likely to inherently possess the same characteristics of the claimed aqueous antimicrobial composition particularly in view of the similar characteristics which they have been shown to share. Thus, the

claimed aqueous antimicrobial composition would have been obvious to those of ordinary skill in the art within the meaning of USC 103. For instance, it is unclear from the teachings of Carlin whether the fluoride ion releasing fluorine compounds used in the making of the referenced composition introduce ions in the water in an amount of about 1 to 1000 ppm or about 10 to 100 ppm. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the parameters of the claimed composition by adjusting the amounts of the ion introducing agents taught by Carlin to provide the claimed invention because Carlin teaches the beneficial effects for the addition of fluoride ion releasing fluorine compounds. For example, Carlin teaches that fluoride ion releasing fluorine compounds are water-soluble and lack reaction with other components in his composition (see page 13, lines 22 to page 14, line 1). At the time the invention was made, one of ordinary skill in the art would have been motivated and one of ordinary skill in the art would have had a reasonable expectation of success to optimize the amounts of the ion introducing agents taught by Carlin to provide the claimed aqueous antimicrobial composition because Carlin teaches that the combining of at least one essential oil (s) and mixtures thereof with an alcohol/water mixture (solvent), water, and an ion introducing agent provides a composition having plaque-removing and antiseptic properties. Moreover, Carlin teaches that the amount of the ion introducing agent depends upon "the solubility of the fluorine compound, and the nature of the final liquid oral anti-plaque, anti-gingivitis composition." See page 14, lines 14-19. Thus, the effective varying of the amounts of the ion introducing agents taught by Carlin would have been no more than a routine matter of

optimization for one of ordinary skill in the art at the time the invention was made.

The United States Patent and Trademark Office is not equipped to conduct experimentation in order to determine whether or not Applicants' composition differs and, if so, to what extent, from that discussed in the reference. Therefore, with the showing of the reference, the burden of establishing non-obviousness by objective evidence is shifted to Applicants.

Accordingly, the claimed invention as a whole was at least *prima facie* obvious, if not anticipated by the reference, especially in the absence of sufficient, clear, and convincing evidence to the contrary.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Romano et al. (C) in view of Tapin (A), Hungerbach et al. (B) and Ando et al. (N).

Applicant claims an aqueous antimicrobial composition for disinfecting, sanitizing or cleaning surfaces, comprising : (a) about 0.5% to 10% by volume of at least one essential oil exhibiting antimicrobial properties in a water carrier; (b) about 2 to 12% by volume of a solvent

sufficient to form an aqueous mixture of the essential oils in the water carrier; (c) sufficient water to make up 100% by volume; and (d) about 1 to 1000 ppm of an agent for introducing ions into the water. Applicant further claims the composition defined in claim 1, wherein the ion agent is selected from the group consisting of copper sulfate, cupric carbonate, and colloidal silver. The composition defined in claim 1, wherein the ion agent is copper sulfate. The composition defined in claim 1, comprising about 10 to 100 ppm of the ion agent. The composition defined in claim 1, wherein the at least one essential oil is selected from the group consisting of thyme oil, lemongrass oil, clove oil and eucalyptus oil, and mixtures thereof. The composition defined in claim 4, comprising about 2% to 3.25% by volume of the solvent. The composition defined in claim 4, comprising about 0.05% to 0.50% by volume of a surfactant. The composition defined in claim 1, wherein the ions are groundwater ions. The composition defined in claim 8, wherein the ion agent is copper sulfate.

Romano teaches an aqueous antimicrobial composition for disinfecting, sanitizing or cleaning surfaces comprising a peroxygen bleach, glutaraldehyde, at least 0.003%, and preferably 6.006% to 10% of essential oils (see Column 6, lines 10-29); up to 15% or 2 to 7% of a solvent, such as ethanol (see Column 11, lines 24-49), to form an aqueous mixture of the aqueous mixture of the essential oils in the water carrier; an ionizing agent; and, sufficient water to make up to 100% by volume (see Column 12, lines 56-62). In Column 5, lines 45-48, Romano teaches that surfactants comprise at least 0.005% by weight of the total composition, preferably 0.01% to

10% and more preferably from 0.1% to 5%. In Column 7, lines 33-67, Column 8, and Column 9, lines 1-40, Romano teaches surfactants which may function as an ionizing agent.

The teachings of Romano are set forth above. Romano does not teach a composition wherein the agent for introducing ions into the water is selected from copper sulfate, cupric carbonate and colloidal silver and wherein the mixture of essential oils are comprised in the specified amounts as instantly claimed. However, it would have been obvious to one of ordinary skill in the art to modify the antimicrobial composition taught by Romano by adding copper sulfate, cupric carbonate, or a silver colloidal to provide the claimed invention because Tapin, Hungerbach and Ando teach that such ionizing agents are well known in the art to have antimicrobial activity. For example, Tapin teaches that copper compounds such as copper sulfate and copper carbonate (cupric carbonate) exert algaecidic activity. In Column 2, lines 56-69, Tapin teaches an aqueous biocidal composition comprising 4 to 5 PPM of a quaternary ammonium compound with a corresponding dose of 0.7 to 0.9 PPM of copper which is effective against algae, fungi and bacteria. In Column 4, a method for the making of the solution is taught, wherein copper sulfate is stirred with sodium carbonate, mixed with various solvents, and eucalyptus oil. In Column 4, lines 50-59, Tapin teaches that eucalyptus oil is present in the range of about 0 to about 21 per 2500ℓ of final product. Hungerbach teaches oral hygiene agents, comprising a hydrogen peroxide solution, a silver colloid, essential oils (about 1%), Tween-80, an ethanol solvent (about 7%), and sufficient water to make up 100% by volume. Hungerbach teaches that the agents are useful as disinfectants and have significant bacteriostatic and

fungistatic activity. See entire document. Finally, Ando teaches a silver colloid having high antimicrobial activity, which can be used in the making of liquid antibacterial compositions. At the time the invention was made, one would have been motivated with a reasonable expectation of success to modify the aqueous antimicrobial composition taught by Romano by employing the ionizing agents taught by Tapin, Hungerbach and Ando because each of the references clearly teach the antimicrobial effectiveness of copper sulfate, cupric carbonate or copper carbonate, and silver colloid when they are used in the making of aqueous antimicrobial solutions. Moreover, it is well known that each of the referenced ionizing agents are non-toxic and "generally recognized as safe" chemical agents which would be desirable properties in the making of an aqueous antimicrobial composition and its application to a wide variety of surfaces for the purpose of disinfecting, sanitizing or cleaning.

It also would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the essential oils thyme, lemongrass, clove, and eucalyptus in the making of an aqueous antimicrobial composition with the functional effect for disinfecting, sanitizing or cleaning surfaces because Romano expressly teaches the antimicrobial activity of essential oils, such as thyme, lemongrass, clove and eucalyptus, and mixtures thereof, when combined with an organic ionizing agent and surfactant. At the time the invention was made, one would have been motivated to combine the essential oils of thyme, lemongrass, clove and eucalyptus in the various volume amounts because Romano teaches, in Column 6, lines 35-58, that improved disinfection and cleansing of heavily soiled surfaces is possible, even at high dilution levels of the composition

to water of 1:100. Moreover, Romano specifically teaches in Column 6, lines 23-25, that thymol and eucalyptol are preferred antimicrobial essential oil actives. Thus, one would have had a reasonable expectation of success that an aqueous antimicrobial composition which comprised a mixture of thyme, lemongrass, clove and eucalyptus in the specified amounts would have the desirable functional effect of disinfecting, sanitizing or cleaning because clearly Romano teaches ingredients to improve the disinfecting and cleaning properties of a composition on fungi, gram negative and/or gram positive bacteria, wherein the composition could be used to disinfect, sanitize or clean a variety of surfaces in multiple forms. See Column 11, lines 56-67 and Column 12, lines 1-55. Further motivation would have been provided to one of ordinary skill in the art because Romano teaches in Column 6, lines 59-67 bridging Column 7, lines 1-23, Romano teaches methods to evaluate the bactericidal activity and disinfecting properties of a compositions in the making and testing of an aqueous antimicrobial composition.

As the references indicate the various proportions and amounts of the ingredients used in the claimed compositions are result variable, they would be routinely optimized by one of ordinary skill in the art in practicing the invention disclosed by the references.

It is well known that it is *prima facie* obvious to combine two or more ingredients each of which is taught by the prior art to be useful for the same purpose in order to form a third composition which is useful for the same purpose. The idea for combining them flows logically from their having been used individually in the prior art. *In re Pinten*, 459 F.2d 1053, 173 USPQ 801 (CCPA 1972); *In re Susi*, 58 CCPA 1074, 1079-80; 440 F.2d 442, 445; 169 USPQ 423, 426

(1971); *In re Crockett*, 47 CCPA 1018, 1020-21; 279 F.2d 274, 276-277; 126 USPQ 186, 188 (1960).

Accordingly, the claimed invention was prima facie obvious to one of ordinary skill in the art at the time the invention was made, especially in the absence of evidence to the contrary.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlin et al. (O) in view of Tapin (A), Hungerbach et al. (B), Ando et al. (N), and further in view of Lawless (U) and Schnaubelt (V).

Applicant's claimed invention was set forth above. Applicant further claims the composition defined in claim 1, wherein the at least one essential oil comprises a mixture of essential oils. Applicant further claims the composition defined in claim 10, wherein the mixture of essential oils comprises about 0.07 to 2.5% by volume of thyme oil, and about 0.20 to 2.5% by volume of clove oil.

The teachings of Carlin are set forth above. Carlin teaches the claimed invention except for wherein the ion agent is selected from the group consisting of copper sulfate, cupric carbonate and colloidal silver, and wherein the at least one essential oil comprises a mixture of essential oils, and wherein the mixture of essential oils comprises about 0.07 to 2.5% by volume of thyme oil, and about 0.20 to 2.5% by volume of clove oil. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the instantly claimed ingredients to the composition taught by Carlin to provide the claimed aqueous antimicrobial composition

because Tapin, Hungerbach and Ando teach that such ionizing agents are well known in the art to have antimicrobial activity; and Lawless and Schnaubelt teach the antimicrobial properties of thyme oil and clove oil. Firstly, Tapin teaches that copper compounds such as copper sulfate and copper carbonate (cupric carbonate) exert algaecidic activity. In Column 2, lines 56-69, Tapin teaches an aqueous biocidal composition comprising 4 to 5 PPM of a quaternary ammonium compound with a corresponding dose of 0.7 to 0.9 PPM of copper which is effective against algae, fungi and bacteria. In Column 4, a method for the making of the solution is taught, wherein copper sulfate is stirred with sodium carbonate, mixed with various solvents, and eucalyptus oil. In Column 4, lines 50-59, Tapin teaches that eucalyptus oil is present in the range of about 0 to about 21 per 2500ℓ of final product. Secondly, Hungerbach teaches oral hygiene agents, comprising a hydrogen peroxide solution, a silver colloid, essential oils (about 1%), Tween-80, an ethanol solvent (about 7%), and sufficient water to make up 100% by volume. Hungerbach teaches that the agents are useful as disinfectants and have significant bacteriostatic and fungistatic activity. See entire document. Thirdly, Ando teaches a silver colloid having high antimicrobial activity, which can be used in the making of liquid antibacterial compositions. Finally, like Carlin, Lawless teaches that thyme oil has antiseptic, bactericidal and disinfecting activity and that clove oil has antiseptic and antiviral activity; and Schnaubelt teach that both thyme oil and clove oil have broad spectrum antimicrobial activity (see table on page 35 and page

36, lines 9-14). At the time the invention was made, one would have been motivated with a reasonable expectation of success to modify the aqueous antimicrobial composition taught by Carlin by employing the ionizing agents taught by Tapin, Hungerbach and Ando and the thyme oil and clove oil taught by Lawless and Schnaubelt because each of the references clearly teach the antimicrobial effectiveness of copper sulfate, cupric carbonate or copper carbonate, colloidal silver, thyme oil and clove oil when they are used in the making of antimicrobial solutions. Moreover, it is well known that each of the referenced ionizing agents and essential plant oils are non-toxic and "generally recognized as safe" chemical agents which would be desirable properties in the making of an aqueous antimicrobial composition and its application to a wide variety of surfaces for the purpose of disinfecting, sanitizing or cleaning.

It is well known that it is *prima facie* obvious to combine two or more ingredients each of which is taught by the prior art to be useful for the same purpose in order to form a third composition which is useful for the same purpose. The idea for combining them flows logically from their having been used individually in the prior art. *In re Pinten*, 459 F.2d 1053, 173 USPQ 801 (CCPA 1972); *In re Susi*, 58 CCPA 1074, 1079-80; 440 F.2d 442, 445; 169 USPQ 423, 426 (1971); *In re Crockett*, 47 CCPA 1018, 1020-21; 279 F.2d 274, 276-277; 126 USPQ 186, 188 (1960).

As the references indicate the various proportions and amounts of the ingredients used in the claimed compositions are result variable, they would be routinely optimized by one of ordinary skill in the art in practicing the invention disclosed by the references.

Accordingly, the claimed invention was prima facie obvious to one of ordinary skill in the art at the time the invention was made, especially in the absence of evidence to the contrary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michele Flood whose telephone number is (703) 308-9432. The examiner can normally be reached on Monday through Friday from 7:15 am to 3:45 pm. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1600 receptionist whose telephone number is (703) 308-0196 or the Supervisory Patent Examiner, Brenda Brumback whose telephone number is (703) 306-3220.

MICHELE FLOOD
PATENT EXAMINER

Michele C. Flood.

MCF

March 21, 2003